



Universal Global Scientific Industrial Co., Ltd.
No. 141, Lane 351, Taiping Road, Sec. 1, Tsao-tuen,
Nantou County 54261, Taiwan
TEL +886-49-221-2700
FAX +886-49-232-9561

802.11 a/b/g/n + BT 4.2 module User Manual

Model No.: WM-BAN-MT-41

FCC ID: COF-WMBANMT41

IC: 10293A-WMBANMT41

PMN: WM-BAN-MT-41

HVIN: WM-BAN-MT-41

FVIN: 20180927145802



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1. Product Spec

WiFi

Features	Description
WLAN Standards	IEEE 802.11 a/b/g/n
Antenna Port	Single Antenna 1Tx/1Rx, Printed Antenna for WiFi & Bluetooth
Number of Sub Channels	2.4GHz Band channel 1 ~ 11
	5GHz band channel 36 ~ 165
Modulation	DSSS, CCK, OFDM, BPSK, QPSK, 16QAM, 65QAM
Supported data rates	1, 2, 5, 5, 11 (Mbps)
	6, 9, 12, 18, 24, 36, 48, 54 (Mbps)
	HT20_MCS0 (6.5Mbps) ~ HT20_MCS7(65Mbps)

Bluetooth

Features	Description
Frequency Band	2402MHz ~ 2480MHz
Number of Channels	Channel 0 ~ 39
Modulation	GFSK
Antenna Port	Single Antenna 1Tx/1Rx, Printed Antenna for WiFi & Bluetooth

Antenna Spec on module

Antenna Type: Printed Antenna

Antenna Gain: 2.4GHz 0dBi, 5GHz 3dBi



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2. User Guide

WiFi

Execute Tera Term Program

Set Serial Port to “com10” (depend on which com port of WM-BAN-MT-41 get in OS)

Setup --> Serial Port --> Baud rate: 921600 --> OK

- Connecting to WiFi AP router

Input command as below

wifi_task

wifi config set wirelessmode 0 5

wifi config set country 1 7

wifi connect set eventcb 1 1

wifi connect set scan 1 0 1

wifi config set opmode 1

wifi config set ssid 0 WAC505_NG (“WAC505_NG” is the SSID of WiFi AP)

wifi config set reload

(get Module’s IP address)

it will show the ip address on the Tera Term windows

```
[T: 528932 M: common C: info F: wifi_station_port_secure_event_handler L: 129]: wifi connected  
Latency = 7171 ns  
[T: 531459 M: common C: info F: ip_ready_callback L: 79]: *****  
[T: 531459 M: common C: info F: ip_ready_callback L: 80]: DHCP got IP:192.168.1.150  
[T: 531459 M: common C: info F: ip_ready_callback L: 81]: *****  
[T: 531459 M: luip C: info F: netif_find_by_type L: 1159]: name=ap1  
[T: 531462 M: luip C: info F: inform_ip_ready_callback L: 1032]: inform_ip_ready_callback
```

Use another NoteBook/WiFi connect to AP, then ping module’s IP to checking the connection.



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Bluetooth

Execute Tera Term Program

Set Serial Port to "com10" (depend on which com port of WM-BAN-MT-41 get in OS)

Setup --> Serial Port --> Baud rate: 921600 --> OK

Input command as below

wifi_task

bt_task

btaddr

(get module's MAC address)

MAC, ex:46:A3:FC:9D:E3:26

Another NB, user ubuntu USB start up Ubuntu system.

Open Terminal

Input command as below to checking the communication (l2ping)

hcitool scan

while [-z `pidof l2ping`]; do sudo l2ping -i hci0 46:A3:FC:9D:E3:26; sleep 3; done

input ctrl+c twice to stop l2ping

Input command to trust device

trust 46:A3:FC:9D:E3:26

pair 46:A3:FC:9D:E3:26

connect 46:A3:FC:9D:E3:26

input "quit" to disconnect



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3. Regulatory Information

Federal Communication Commission Interference Statement

This module is certified pursuant to two Part 15 rules sections(15.407, 15.247). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.



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This device is intended only for OEM integrators under the following conditions:

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed

IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains FCC ID: **COF-WMBANMT41**". The grantee's FCC ID can be used only when all FCC compliance requirements are met.

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.



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This device is intended only for OEM integrators under the following conditions:

- 1) The antenna must be installed with 20 cm is maintained between the antenna and users in mobile or fixed applications.
- 2) The Antenna for Module (WM-BAN-MT-41) is Non-detachable and the maximum antenna gain allowed for use with this device is 0dBi@2.4GHz band & 3dBi@5GHz band.
- 3) The transmitter module may not be co-located with any other transmitter or antenna.
- 4) **OEM integrators Must** demonstrate SAR test and meet compliance before end-product with module (WM-BAN-MT-41) marketed in portable application.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

OEM integrators Must demonstrate Part 15B test and meet compliance before end-product with module (WM-BAN-MT-41) marketed.

The end product shall bear the following 15.19 statement: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

US Information

Company: USI America, Inc.

Address: 1255 E. Arques Ave, Sunnyvale, CA 94085

Contact Person

Brian Weng

Technical Sales Manager

Sales and Services

USI Co., Ltd

Email: brian_weng@usiglobal.com

Office: (408) 636-9604

Fax: (408) 636-9492



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Industry Canada statement:

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The Country Code Selection feature is disabled for products marketed in the US/Canada
For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

Pour les produits disponibles aux États-Unis / Canada du marché, seul le canal 1 à 11 peuvent être exploités. Sélection d'autres canaux n'est pas possible.

Radiation Exposure Statement:

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

IMPORTANT NOTE for OEM integrator:

This module is intended for OEM integrator.



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The OEM integrator is still responsible for

1. ensuring that the end-user has no manual instructions to remove or install module.
2. the ISSED compliance requirement of the end product, which integrates this module.
3. Appropriate measurements and if applicable additional equipment authorizations of the host device to be addressed by the integrator/manufacturer.
4. The separate approval is required for all other operating configurations, including portable configurations and different antenna configurations.

This device is intended only for OEM integrators under the following conditions: (For module device use)

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Information on test modes and additional testing requirements:

This module is restricted to integration into hosts for indoor use only.

This module has been approved under stand-alone configuration.

OEM integrator has be limited the operation channels in channel 1-11 for 2.4GHz band.

The separate approval is required for all other operating configurations, including portable configurations with respect to Part 2.1093 and different antenna configurations

The information on how to configure test modes for host product evaluation for different operational conditions for a stand-alone modular transmitter in a host, versus with multiple, simultaneously transmitting modules or other transmitters in a host can be found at KDB Publication 996369 D04.

Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes: (Pour utilisation de dispositif module)

- 1) L'antenne doit être installée de telle sorte qu'une distance de 20 cm est respectée entre l'antenne et les utilisateurs, et
- 2) Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne.

Tant que les 2 conditions ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours responsable des essais sur son



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produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.

Informations sur les modes de test et les exigences de test supplémentaires:

Ce module est limité à l'intégration dans des hôtes pour une utilisation en intérieur uniquement.

Ce module a été approuvé en configuration autonome.

L'intégrateur OEM a limité les canaux d'opération dans le canal 1-11 pour la bande 2,4 GHz.

L'approbation distincte est requise pour toutes les autres configurations d'exploitation, y compris les configurations portables conformément à la partie 2.1093 et les différentes configurations d'antenne.

La KDB Publication 996369 D04 contient des informations sur la configuration des modes de test pour l'évaluation du produit hôte pour différentes conditions de fonctionnement d'un émetteur modulaire autonome dans un hôte, par opposition à plusieurs modules émettant simultanément ou d'autres émetteurs d'un hôte

IMPORTANT NOTE:

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the IC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate Canada authorization.

NOTE IMPORTANTE:

Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'ID IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains IC: 10293A-WMBANMT41".

Plaque signalétique du produit final

Ce module émetteur est autorisé uniquement pour une utilisation dans un dispositif où l'antenne peut être installée de telle sorte qu'une distance de 20cm peut être maintenue entre l'antenne et



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les utilisateurs. Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante:

"Contient des IC: 10293A-WMBANMT41".

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

Manuel d'information à l'utilisateur final

L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.

Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.